

9.0 AOC 12 - DOG TRAINING AREA

9.1 LOCATION OF STUDY AREA

The Dog Training Area comprises approximately 0.6 acres within the Cantonment Area at the Fort McClellan, Alabama Army Installation (Fig. 1). The study area boundary was devised by adding a 50-ft buffer outside of the Dog Training Area site boundary.

9.2 AERIAL PHOTOGRAPH QUALITY ISSUES

A few photograph quality issues were encountered during photograph interpretation. They were corrected as follows:

- X **Quality** - In many areas of the photographs, the dynamic range of brightness values was insufficient to distinguish land cover classes. Due to extreme brightness (almost white), ground cover such as grass, bare soil, trails, and roads could not be differentiated. At other locations, extremely dark (nearly black) areas made it difficult to delineate grass from forested areas. Where appropriate, the problem areas of the photographs were subset and image enhancement techniques were applied. Simple adjustments to the brightness and contrast were conducted, or in more severe cases, a histogram equalization in the range of the lookup table was performed on the specific area where interpretation was difficult. Photographic interpretation could not be conducted on the 1937 photographs due to the poor quality of the photographs.
- X **Rectification** - Although second- and third-order transformations were used in the rectification of the digital photographs, several rectified photographs contained too much error within the Dog Training Area to accurately digitize land use/cover polygons. Factors contributing to the error included: (1) insufficient ground control points (GCPs) due to pronounced changes in land cover between years, (2) photographic distortion (location of the site in relation to the center of the photograph and the angle of the camera/aircraft when the photograph was acquired), and (3) terrain distortion (a single photograph may cover a large geographic area of varying elevations even though the site of interest may have little topographic relief). To improve the photographic registration of the study area, the Dog Training Site was subset from the rectified digital photographs in question and the newly-created image files were rectified separately.

9.3 FINDINGS

Complete photographic coverage of the study area was available for eight years of photographic coverage from 1937 to 1994. A total of 84 anomalies were identified in the year-by-year land cover analysis (Fig. 2). All anomalies were inspected to ascertain the cause of each anomaly. All anomalies were resolved. Anomalies potentially associated with waste disposal or chemical training activities were determined to be of potential concern and should be assessed by the USAESCH. Of the 84 anomalies identified, 62 were caused by new roads, pre-existing and former roads and trails, construction and removal of buildings, and the clearing of trees and landscaping associated with construction. The remaining 22 anomalies were the result of temporary trails and the clearing of trees and/or groundcover; these anomalies are considered to be of potential concern.

1937. The 1937 photographs were not interpreted because of the poor quality of the available photographs (see Fig. 3a). However, no pre-existing anomalous areas were identified during a visual inspection of the photographs.

1937 to 1940. Since the 1937 photographs were not interpreted, the land use/cover was not available. However, one anomaly was identified during the land cover analysis for 1940 (see Table 1 and Fig. 3b). This anomaly is of potential concern and was the result of a new trail (1 anomaly).

1940 to 1944. Twenty-three anomalies were identified during the land cover change analysis for the years 1940 and 1944 (see Table 1 and Fig. 3c). The twenty-three anomalies were the result of a former trail, landscaping, construction of buildings and new roads, and the clearing of trees associated with construction. There are no anomalies of potential concern.

1944 to 1954. Thirty-two anomalies were identified during the land cover change analysis for the years 1944 and 1954 (see Table 1 and Fig. 3d). Twenty-eight anomalies were the result of the removal of buildings, previous landscaping, and former roads. The remaining four anomalies are of potential concern and were the result of the clearing of trees (4 anomalies).

1954 to 1961. Nine anomalies were identified during the land cover change analysis for the years 1954 and 1961 (see Table 1 and Fig. 3e). Six anomalies were the result of pre-existing and former roads. The three remaining anomalies are of potential concern and were the result of the clearing of trees (3 anomalies).

1961 to 1969. Six anomalies were identified during the land cover change analysis for the years 1961 and 1969 (see Table 1 and Fig. 3f). One anomaly was the result of a pre-existing road. The five remaining anomalies are of potential concern and were the result of the clearing of trees (5 anomalies).

1969 to 1982. Seven anomalies were identified during the land cover change analysis for the years 1969 and 1982 (see Table 1 and Fig. 3g). One anomaly was the result of a pre-existing road. The six remaining anomalies are of potential concern and were the result of the clearing of trees (5 anomalies) and another cleared area (1 anomaly).

1982 to 1994. Six anomalies were identified during the land cover change analysis for the years 1982 and 1994 (see Table 1 and Fig. 3h). Three of the anomalies were the result of pre-existing roads and pre-existing and former cleared areas. The remaining three anomalies are of potential concern and were the result of the clearing of trees (3 anomalies).

Figure 1

Figure 2

Table 1. Dog Training Area - Anomaly Resolution

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies¹
Yes	1	1940	Trail	9, 12, 14-16, 22, 23
	2	1944	New Building; trees cleared	26, 27
	3	1944	Landscaping; trees cleared	25, 28, 29, 33, 34, 37, 39, 46, 49
	4	1944	Building; trees cleared	47, 48
	5	1944	Building; trees cleared	50-52
	6	1944	Building; trees cleared	30-32, 45
	7	1944	Building; trees cleared	35, 36, 38
	8	1944	Building; trees cleared	9, 10, 44
	9	1944	Building (former trail - first visible 1940)	1, 8, 10, 44
	10	1944	Building; trees cleared	8, 9, 44
	11	1944	Landscaping; trees cleared	None
	12	1944	Landscaping (former trail - first visible 1940)	1
	13	1944	Landscaping; trees cleared	None
	14	1944	Landscaping (former trail - first visible 1940)	1
	15	1944	Road; former trail (first visible 1940)	1, 17, 18, 23, 24, 40, 41, 59, 60, 68, 73, 79
	16	1944	Former trail; overgrown (first visible 1940)	1
	17	1944	Road; trees cleared	15, 17, 18, 23, 24, 40, 41, 59, 60, 68, 73, 79
	18	1944	Road; trees cleared	15, 17, 22, 24, 40, 42, 43, 59, 60, 62-65, 68, 73, 79
	19	1944	Trees cleared (associated with construction of road and building complex)	None
	20	1944	Trees cleared (associated with construction of road and building complex)	None
	21	1944	Trees cleared (associated with construction of road and building complex)	None
	22	1944	Former trail; overgrown (first visible 1940)	1
	23	1944	Road; former trail (first visible 1940)	1, 15, 17, 18, 24, 40, 43, 64, 65, 68, 73, 79
	24	1944	Road; trees cleared	15, 17, 18, 23, 40, 43, 64, 65, 68, 73, 79

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies¹
	25	1954	Overgrown landscaping	3
	26	1954	Building removed (first visible 1944)	2
	27	1954	Building removed (first visible 1944)	2
	28	1954	Overgrown landscaping	3
	29	1954	Overgrown landscaping	3
	30	1954	Building removed (first visible 1944)	6
	31	1954	Building removed (first visible 1944)	6
	32	1954	Building removed (first visible 1944)	6
	33	1954	Overgrown landscaping	3
	34	1954	Overgrown landscaping	3
	35	1954	Building removed (first visible 1944)	7
	36	1954	Building removed (first visible 1944)	7
	37	1954	Overgrown landscaping	3
	38	1954	Building removed (first visible 1944)	7
	39	1954	Overgrown landscaping	3
	40	1954	Pre-existing road (first visible 1944)	15, 17, 18, 23, 24, 59, 60, 62-65
	41	1954	Former road; overgrown (first visible 1944)	15, 17, 18
	42	1954	Former road; overgrown (first visible 1944)	18
	43	1954	Former road; overgrown (first visible 1944)	18, 23, 24, 60, 68, 73
	44	1954	Building removed (first visible 1944)	8, 9, 10
	45	1954	Building removed (first visible 1944)	6
	46	1954	Overgrown landscaping	3
	47	1954	Building removed (first visible 1944)	4
	48	1954	Building removed (first visible 1944)	4
	49	1954	Overgrown landscaping	3
	50	1954	Building removed (first visible 1944)	5
	51	1954	Building removed (first visible 1944)	5
	52	1954	Building removed (first visible 1944)	5
Yes	53	1954	Trees cleared	None

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies¹
Yes	54	1954	Trees cleared	None
Yes	55	1954	Trees cleared	None
Yes	56	1954	Trees cleared	None
Yes	57	1961	Trees cleared	None
Yes	58	1961	Trees cleared	None
	59	1961	Former road; overgrown (first visible 1944)	15, 17, 18, 40
	60	1961	Pre-existing road (first visible 1944)	15, 17, 18, 23, 24, 40, 68, 73, 79
Yes	61	1961	Trees cleared	None
	62	1961	Former road; overgrown (first visible 1944)	18, 40
	63	1961	Former road; overgrown (first visible 1944)	18, 40
	64	1961	Former road; overgrown (first visible 1944)	18, 23, 40
	65	1961	Former road; overgrown (first visible 1944)	23, 24, 40
Yes	66	1969	Trees cleared	None
Yes	67	1969	Trees cleared	None
	68	1969	Pre-existing road (first visible 1944)	15, 17, 18, 23, 24, 40, 60, 73, 79
Yes	69	1969	Trees cleared	None
Yes	70	1969	Trees cleared	None
Yes	71	1969	Trees cleared	None
Yes	72	1982	Trees cleared	None
	73	1982	Pre-existing road (first visible 1944)	15, 17, 18, 23, 24, 40, 60, 68, 79
Yes	74	1982	Trees cleared	None
Yes	75	1982	Tress cleared	None
Yes	76	1982	Trees cleared	None
Yes	77	1982	Cleared/bare area	82-84
Yes	78	1982	Trees cleared	None
	79	1994	Pre-existing road (first visible 1944)	15, 17, 18, 23, 24, 40, 60, 68, 73
Yes	80	1994	Trees cleared	None
Yes	81	1994	Trees cleared	None

Of Potential Concern?	Anomaly #	Year of Change	Discussion	Related Anomalies¹
	82	1994	Former cleared area; overgrown (first visible 1982)	77
	83	1994	Pre-existing cleared area; overgrown (first visible 1982)	77
Yes	84	1994	Cleared area (enlargement of area visible in 1982)	77

¹ Related anomalies refer to anomalies which are carried forward from year to year (e.g., a trail) or anomalies which change (e.g., the extension or widening of a trail or cleared area).

9.4 ANOMALIES OF POTENTIAL CONCERN

Eighty-four anomalies were identified during the photographic interpretation of the Dog Training Area. All anomalies have been resolved and 22 are considered to be of potential concern. To facilitate anomaly tracking, the anomalies of potential concern were mapped using the anomaly tracking number assigned in the year-by-year analysis (see Table 2 and Fig. 4). Table 2 provides information for each anomaly of potential concern, including the anomaly tracking number, coordinates for the approximate center of the anomaly (coordinates provided in Alabama State Plane East, North American Datum [NAD] 83), the year the change occurred, and the reason for the anomaly.

Fig. 3a

Fig. 3b

Fig. 3c

Fig. 3d

Fig. 3e

Fig. 3f

Fig. 3g

Fig. 3h

Table 2. Dog Training Area - Anomalies of Concern

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
1	668731.74815	1165536.72931	1940	A new trail was evident in the 1940 photographs. The trail was no longer use in 1944 because a new building, landscaping, and a road were constructed in this location. The building was removed between 1944 and 1954 and most of the area remained clear through 1969. By 1982, much of the area had become reforested. Trees were cleared from a portion of this area prior to the acquisition of the 1994 photographs (see anomalies of potential concern 80 and 81).
53	668793.07976	1165468.58307	1954	Trees were cleared in this area between 1944 and 1954. By 1961, revegetation had begun.
54	668756.57285	1165461.28169	1954	Trees were cleared in this area between 1944 and 1954. By 1961, revegetation had begun.
55	668704.48965	1165453.98031	1954	Trees were cleared in this area between 1944 and 1954. By 1961, revegetation had begun.
56	668650.94618	1165470.04335	1954	Trees were cleared in this area between 1944 and 1954. By 1961, revegetation had begun.
57	668620.28038	1165570.31567	1961	Trees were cleared in this area between 1954 and 1961. By 1969, revegetation had begun.
58	668649.97267	1165600.00795	1961	Trees were cleared in this area between 1954 and 1961. By 1969, revegetation had begun.
61	668818.39122	1165493.89453	1961	Trees were cleared in this area between 1954 and 1961. By 1969, revegetation had begun.
66	668836.88805	1165639.43542	1969	Trees were cleared in this area between 1961 and 1969. By 1982, reforestation had occurred.
67	668850.03054	1165569.82891	1969	Trees were cleared in this area between 1961 and 1969. By 1982, reforestation had occurred.
69	668825.69260	1165515.79868	1969	Trees were cleared in this area between 1961 and 1969. By 1982, revegetation was underway.
70	668810.60307	1165478.80501	1969	Trees were cleared in this area between 1961 and 1969. By 1982, reforestation had occurred.
71	668690.37365	1165530.40144	1969	Trees were cleared in this area between 1961 and 1969. By 1982, reforestation had occurred.
72	668847.59674	1165674.96881	1982	Trees were cleared in this area between 1969 and 1982. By 1994, reforestation had occurred.
74	668793.56652	1165640.89569	1982	Trees were cleared in this area between 1969 and 1982. By 1994, reforestation had occurred.

Anomaly #	Alabama State Plane Coordinates (approximate anomaly center)		Year of Change	Discussion
	X-Coordinate	Y-Coordinate		
75	668688.42661	1165621.91210	1982	Trees were cleared in this area between 1969 and 1982. By 1994, reforestation had occurred.
76	668835.91453	1165590.75954	1982	Trees were cleared in this area between 1969 and 1982. By 1994, reforestation had occurred.
77	668631.96259	1165576.15677	1982	This area was cleared of all vegetation prior to the acquisition of the 1982 photographs. By 1994, the cleared area had been enlarged (see anomaly of potential concern 84).
78	668658.24757	1165538.18958	1982	Trees were cleared in this area between 1969 and 1982. By 1994, reforestation had occurred.
80	668759.00664	1165523.10006	1994	Trees were cleared from the area prior to the acquisition of the 1994 photographs.
81	668757.54636	1165500.22240	1994	Trees were cleared from the area prior to the acquisition of the 1994 photographs.
84	668620.76714	1165586.86546	1994	This cleared area is an enlargement of a 1982 cleared area (see anomaly of potential concern 77).

Figure 4